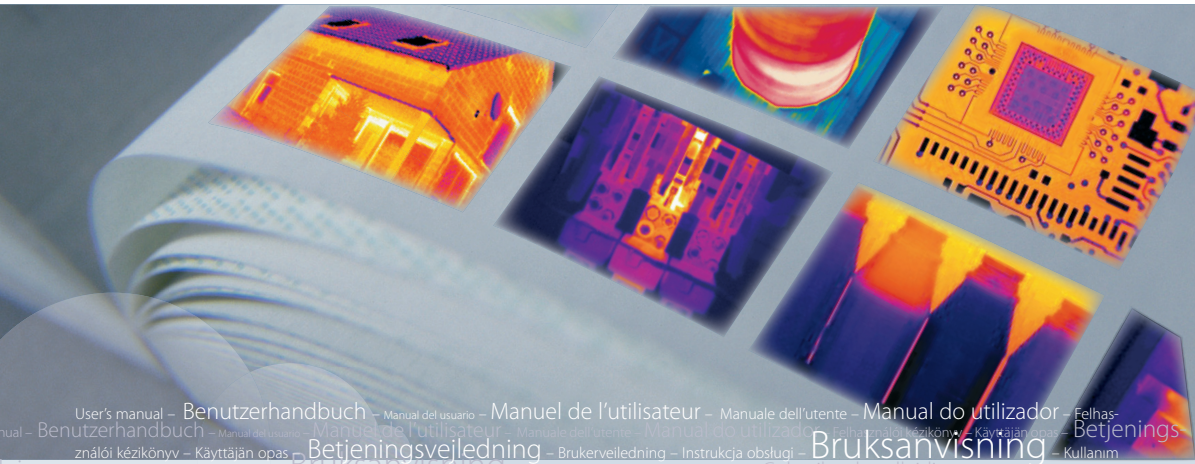
User’s manual


User’s manual – Benutzerhandbuch – Manual del usuario – Manuel de l’utilisateur – Manuale dell’utente – Manual do utilizador – Felhas-
ználói kézikönyv – Käyttäjän opas – Betjeningsvejledning – Brukerveiledning – Instrukcja obsługi – Bruksanvisning – Kullanım
Kılavuzu – Uživatelská příručka – Gebruikershandleiding

FLIR QuickReport

Program version 1.2

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FLIR QuickReport

User's manual

Publ. No. 1558629 Rev. a372 – ENGLISH (EN) – August 5, 2009

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Table of contents

1 Notice to user 1

2 Customer help 2

3 Documentation updates 3

4 Quick Start Guide 4

5 Workflow 5

6 Installation 7
- 6.1 System requirements 7
- 6.2 Installation of FLIR QuickReport 8
  - 6.2.1 Windows® XP installation 8
  - 6.2.2 Windows® Vista installation 9
- 6.3 Updating the program 10

7 Supported file formats 11

8 Window elements & toolbar buttons 12
- 8.1 Window elements: The Organize tab 12
- 8.2 Window elements: The Analyze tab 13
- 8.3 Window elements: The Report tab 14
- 8.4 Toolbar buttons (on the Analyze tab) 15

9 Connecting the camera 17

10 Handling files 18
- 10.1 Moving images 18
  - 10.1.1 Moving images from your camera to your computer 18
  - 10.1.2 Moving images on your computer 20
- 10.2 Copying images 21
- 10.3 Saving images to a different destination folder 22
- 10.4 Cutting & pasting images 23
- 10.5 Deleting images 24
- 10.6 Renaming images 25
- 10.7 Printing images 26
- 10.8 Sending images by e-mail (Microsoft® Outlook only) 27

11 Viewing images 28
- 11.1 Changing view settings 28
- 11.2 Changing zoom factor 29
- 11.3 Rotating images 30
- 11.4 Changing palette 31

12 Analyzing images 32
- 12.1 Using the flying spot meter tool 33
- 12.2 Creating a spot meter 34
- 12.3 Creating a line 35
- 12.4 Creating an area 36
- 12.5 Isotherms & building alarms 37
  - 12.5.1 Creating an isotherm 37

12.5.2 About building alarms 38
12.6 Changing isotherm levels 39
12.7 Moving a spot meter, area, or a line 40
12.8 Deleting a spot meter, area, or a line 41
12.9 Deleting an isotherm or a building alarm 42
12.10 Changing temperature levels 43
12.11 Changing object parameters 44
12.12 Auto-adjusting an image 45

13 Adding & editing image descriptions 46

14 Working with text comments and text comment files 47
14.1 Adding, editing, and deleting text comments 47
14.2 Creating text comment files (*.tcf) 48

15 Creating a report 49

16 Troubleshooting 51
16.1 Restarting the camera 52
16.2 Giving a user Local Administrator Rights 53
16.3 Giving a user rights to install and uninstall device drivers 54
16.4 Troubleshooting password-protected screensaver problems 55

17 About FLIR Systems 56
17.1 More than just an infrared camera 57
17.2 Sharing our knowledge 57
17.3 Supporting our customers 57
17.4 A few images from our facilities 58

1 Notice to user

Typographical conventions

This manual uses the following typographical conventions:

- **Semibold** is used for menu names, menu commands and labels, and buttons in dialog boxes.
- *Italic* is used for important information.
- `Monospace` is used for code samples.
- UPPER CASE is used for names on keys and buttons.

User-to-user forums

Exchange ideas, problems, and infrared solutions with fellow thermographers around the world in our user-to-user forums. To go to the forums, visit:

http://www.infraredtraining.com/community/boards/

Training

To read about infrared training, visit:

http://www.infraredtraining.com

Additional license information

This software is sold under a single user license. This license permits the user to install and use the software on any compatible computer provided the software is used on only one computer at a time. One (1) back-up copy of the software may also be made for archive purposes.

2 Customer help

General

For customer help, visit:

http://flir.custhelp.com

Submitting a question

To submit a question to the customer help team, you must be a registered user. It only takes a few minutes to register online. If you only want to search the knowledge-base for existing questions and answers, you do not need to be a registered user.

When you want to submit a question, make sure that you have the following information to hand:

- The camera model
- The camera serial number
- The communication protocol, or method, between the camera and your PC (for example, HDMI, Ethernet, USB™, or FireWire™)
- Operating system on your PC
- Microsoft® Office version
- Full name, publication number, and revision number of the manual

Downloads

On the customer help site you can also download the following:

- Firmware updates for your infrared camera
- Program updates for your PC software
- User documentation
- Application stories
- Technical publications

3 Documentation updates

General

Our manuals are updated several times per year, and we also issue product-critical notifications of changes on a regular basis.

To access the latest manuals and notifications, go to the Download tab at:

http://flir.custhelp.com

It only takes a few minutes to register online. In the download area you will also find the latest releases of manuals for our other products, as well as manuals for our historical and obsolete products.

4 Quick Start Guide

Procedure

Follow this procedure to get started right away:

1	Install FLIR QuickReport on your computer. For more information, see section 6 – Installation on page 7.
2	Connect your camera to the computer, using a USB cable. For more information, see section 9 – Connecting the camera on page 17.
3	Start FLIR QuickReport.
4	On the **Organize** tab, click **Transfer images** and follow the on-screen instructions to move the images from the camera to a destination folder on your computer. For more information, see section 10 – Handling files on page 18.
5	In the folder pane, go to the destination folder.
6	On the **Analyze** tab, add measurement tools, create or edit image descriptions, edit text comments, listen to voice comments, change object parameters, etc. For more information, see section 12 – Analyzing images on page 32.
7	On the **Report** tab, select a report template and move the images that you want to include in the report to the report pane by using a drag-and-drop operation. For more information, see section 15 – Creating a report on page 49.
8	Create the report.

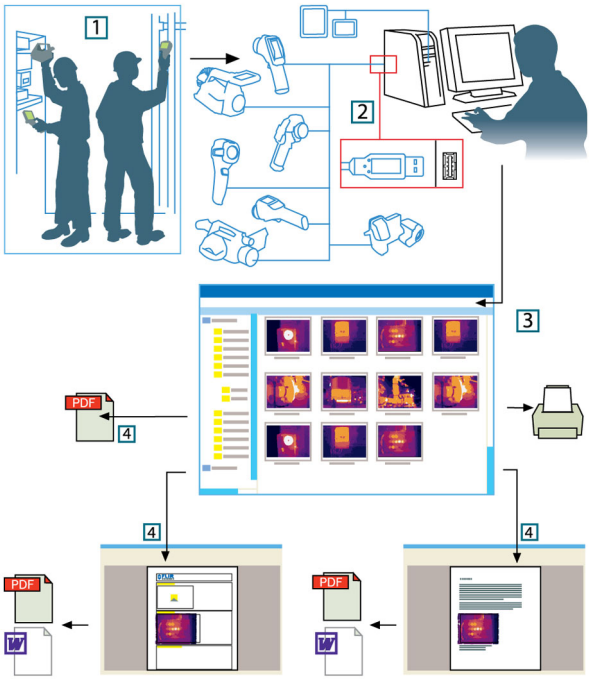
5 Workflow

General

When you carry out an infrared inspection you follow a typical workflow. This section gives an example of an infrared inspection workflow.

Figure

10548003;a9



Explanation

This table gives an explanation to the figure above:

1	Use your camera to take your infrared images and/or digital photos.
2	Do one of the following: ▪ **Method 1:** Move the images using a USB cable. ▪ **Method 2:** Move the images using a CompactFlash card. ▪ **Method 3:** Move the images using an SD Memory Card. For more information, see the following sections: ▪ Section 9 – Connecting the camera on page 17 ▪ Section 10.1 – Moving images on page 18

3	In FLIR QuickReport, do one or more of the following: ■ Change how the images are viewed ■ Handle files ■ Analyze images ■ Add and edit image descriptions ■ Add, edit or delete text comments For more information, see the following sections: ■ Section 11 – Viewing images on page 28 ■ Section 10 – Handling files on page 18 ■ Section 12 – Analyzing images on page 32 ■ Section 13 – Adding & editing image descriptions on page 46 ■ Section 14 – Working with text comments and text comment files on page 47
4	Do one of the following to create an infrared report: ■ Using a drag-and-drop operation, organize your report on the **Report** tab, and then click **Create report**. ■ Using a drag-and-drop operation, move images from FLIR QuickReport into Microsoft® Word, add your own comments and descriptions and use Microsoft® Word to create a report. ■ Using a drag-and-drop operation, move images from FLIR QuickReport into FLIR Reporter (an add-on to Microsoft® Word) and use FLIR Reporter to create the report. For more information, see section 15 – Creating a report on page 49.

6 Installation

6.1 System requirements

Operating system

FLIR QuickReport supports USB communication for the following PC operating systems:

- Microsoft® Windows® XP, 32-bit, with Service Pack 2 (SP-2), or later
- Windows® Vista®, 32-bit
- Windows® Vista®, 64-bit

Hardware

Microsoft® Windows® XP:

- Personal computer with an Intel® 800 MHz Pentium processor, or an AMD Opteron, AMD Athlon 64, or AMD Athlon XP processor
- 512 MB of RAM, or greater
- 20 GB of available hard disk space
- CD-ROM or DVD-ROM drive
- Super VGA (1024 × 768) or higher-resolution monitor
- Internet access required for web updates
- Keyboard and Microsoft® mouse, or a compatible pointing device

Microsoft® Windows® Vista:

- Personal computer with a 1 GHz 32-bit (x86) processor
- 1 GB of RAM, or greater
- 40 GB hard disk, with at least 15 GB available hard disk space
- DVD-ROM drive
- Support for DirectX 9 graphics with:
  - WDDM Driver
  - 128 MB of graphics memory (minimum)
  - Pixel Shader 2.0 in hardware
  - 32 bits per pixel
- Super VGA (1024 × 768) or higher-resolution monitor
- Internet access (fees may apply)
- Audio output
- Keyboard and Microsoft® mouse, or a compatible pointing device

Compatibility with software from FLIR Systems

Sending infrared images and digital photos to FLIR Reporter requires one of the following software versions:

- Version 8, or later
- Version 8 Professional, or later
- Version 7 Basic with Service Release 4 (SR-4)
- Version 7 Professional with Service Release 4 (SR-4)

NOTE

- Microsoft® Windows® XP 64-bit is not supported.
- Actual requirements and product functionality may vary based on your system configuration.

6.2 Installation of FLIR QuickReport

6.2.1 Windows® XP installation

NOTE

Before you install FLIR QuickReport, do the following:

1 Close all programs.
2 Uninstall any previous versions of FLIR QuickReport and ThermaCAM™ QuickView.
3 Uninstall any drivers and language packs related to these programs.

Procedure

Follow this procedure to install FLIR QuickReport:

1	Insert the FLIR QuickReport installation CD into the CD-ROM drive. The installation should start automatically. If the installation does not start automatically, follow this procedure: **1** Double-click **My Computer** on **Desktop**. **2** Right-click the CD-ROM drive and click **Explore**. **3** Double-click SETUP.EXE. **4** Go to Step 2 below.
2	FLIR QuickReport requires some prerequisites. If they are not already installed on your computer, click **OK** when asked if you want to install the software.
3	FLIR QuickReport requires Microsoft® .NET Framework 2.0. If this software is not already installed on your computer, click **OK** when asked if you want to install the software. Installation of Microsoft® .NET Framework 2.0 can take several minutes.
4	In the FLIR QuickReport installation wizard dialog box, click **Next**.
5	In the license agreement dialog box, carefully read and accept the license agreement and click **Next**.
6	In the customer information dialog box, enter your customer details and click **Next**.
7	Click **Install**.
8	Click **Finish**.
9	If you are asked to restart your computer, do so.

6.2.2 Windows® Vista installation

General

Before you install FLIR QuickReport, close all programs.

Procedure

Follow this procedure to install FLIR QuickReport:

1	Insert the FLIR QuickReport installation CD into the CD-ROM drive. The installation should start automatically.
2	In the **Autoplay** dialog box, click **Run setup.exe (Published by FLIR Systems)**.
3	In the **User Account Control** dialog box, confirm that you want to install FLIR QuickReport.
4	In the language dialog box, select the language that you want to use and install for FLIR QuickReport.
5	In the **Welcome to the InstallShield Wizard for FLIR QuickReport** dialog box, click **Next**.
6	In the **License Agreement** dialog box, carefully read and accept the license agreement and click **Next**.
7	In the **Customer Information** dialog box, enter your customer details and click **Next**.
8	In the **Ready to Install the Program** dialog box, click **Install**.
9	Click **Finish**. The installation is now completed. If you are asked to restart your computer, do so.

6.3 Updating the program

General

You can update the program in two different ways:

- Download and install program updates (new point releases, bug fixes, patches, etc.).
- Download and install new or revised language packs (user's manuals, help files, etc.).

Procedure

Follow this procedure to update your program:

1	On Windows® **Start** menu, click **Programs**.
2	In the list of programs, go to FLIR Systems and follow this procedure (in this order): **1** On the FLIR QuickReport submenu, click **Check for updates**. **2** On the FLIR QuickReport submenu, click **Check for languages**.
3	Follow the on-screen instructions to download and install the program updates and/or language packs.

7 Supported file formats

General

FLIR QuickReport supports several radiometric and non-radiometric file formats.

Radiometric file formats

FLIR QuickReport supports the following radiometric file formats:

- FLIR radiometric *.jpg
- FLIR radiometric *.img

Non-radiometric file formats

FLIR QuickReport supports the following non-radiometric file formats:

- *.jpg
- *.bmp

NOTE

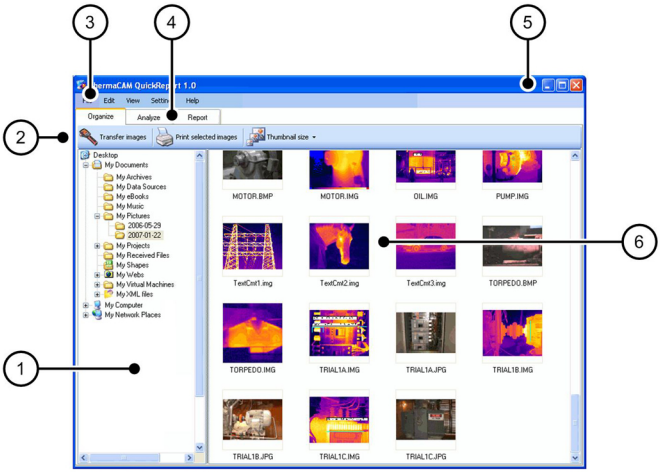
Radiometric *.jpg images that are merged from an infrared image and a digital photo will be correctly displayed in FLIR QuickReport.

8 Window elements & toolbar buttons

*8.1 Window elements: The **Organize** tab*

Figure

10756003;a1



Explanation

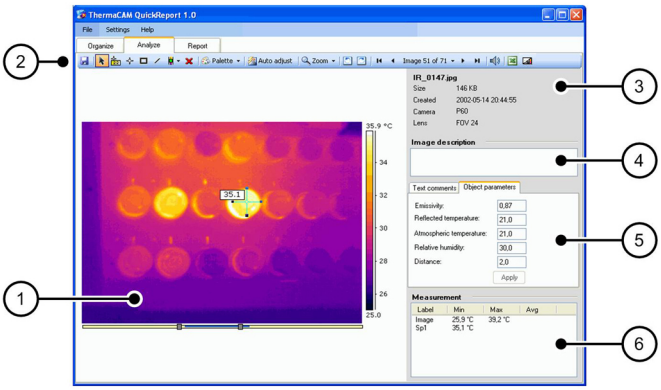
This table gives an explanation to the figure above:

1	Folder pane
2	Buttons (from left to right): ▪ **Transfer images** ▪ **Print selected images** ▪ **Thumbnail size**
3	Menu bar
4	Tabs (from left to right): ▪ **Organize** ▪ **Analyze** ▪ **Report**
5	Minimize, Maximize, and Close buttons
6	Image pane

8.2 Window elements: The **Analyze** tab

Figure

10756103;a3



Explanation

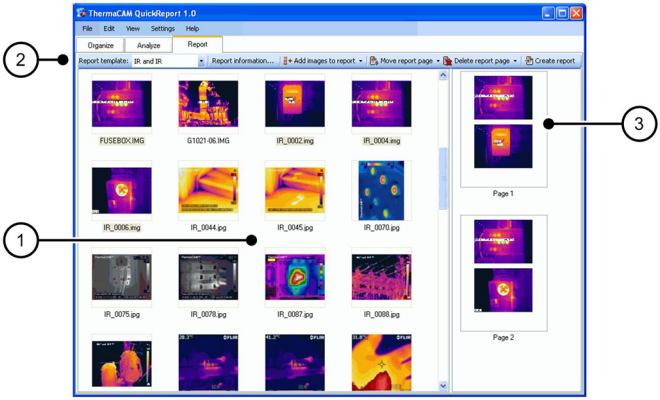
This table gives an explanation to the figure above:

1	Infrared image with measurement tools. Double-clicking a fusion image will display the **Image fusion** dialog box.
2	Image toolbar For more information, see section 8.4 – Toolbar buttons (on the Analyze tab) on page 15.
3	Image information from the camera
4	**Image description** text box. You can edit an existing image description in this text box, or enter a new image description.
5	**Text comments** tab and **Object parameters** tab. You can add, edit and delete text comments, and edit object parameters. You can also create new text comment files (*.tcf files) to use in your camera.
6	Measurement result table

8.3 Window elements: The **Report** tab

Figure

10756203;a1



Explanation

This table gives an explanation to the figure above:

1	Image pane
2	You use these button to configure your inspection report (left to right): ■ **Report template**: To select which report template you want to use ■ **Report information**: To change logotype, enter thermographer and customer contact information, etc. ■ **Add images to report**: To add all or selected images to the report ■ **Move report page**: To move a selected report page to another position in the report ■ **Delete report page**: To delete a selected report page from the report ■ **Create report**: To create the report as a Adobe® PDF file
3	Report preview pane

8.4 Toolbar buttons (on the **Analyze** tab)

Toolbar buttons

	Save tool You use this tool to save changes that you have made within an image.
	Select tool You use this tool when you want to move spots, areas, lines, and isotherm levels within an image. You also use the tool to deselect menu commands on the image toolbar menus.
	Flying spot meter tool You use this tool to create a flying spot meter. When you move the flying spot meter over the image area, the temperature will be displayed at the location of the spot meter.
	Spot meter tool You use this tool to create a spot meter that you can put anywhere on the image. The spot meter and the temperature it displays will be stored within the image when you save it. To move the spot meter, use the Select tool.
	Area tool You use this tool to click-and-drag within the image to create an area. The minimum and maximum temperature in the area will be displayed in the measurement result table. To move the area, use the Select tool.
	Line tool You use this tool to create a line within the image. The minimum and maximum temperature along the line will be displayed in the measurement result table. To move the line, use the Select tool.
	Isotherm tool You use this tool to create isotherms, i.e., to assign specific colors to specific temperature ranges. You also use this tool to work with building alarms. To move the isotherm levels in the temperature scale, use the Select tool.
	Delete tool You use this tool to delete one or several selected measurement tools.
	Palette tool You use this tool to change the color palette within an image.

	Auto-adjust tool You use this tool to auto-adjust an image for best brightness and contrast.
	Zoom tool You use this tool to change the zoom factor within an image.
	Rotate counter-clockwise tool You use this tool to rotate an image counter-clockwise in 90° increments.
	Rotate clockwise tool You use this tool to rotate an image clockwise in 90° increments.
	Image navigation tool, #1 You use this tool to go to the first image in the work folder. By using the slider, you can quickly browse through the images in a work folder.
	Image navigation tool, #2 You use this tool to go to the previous image in the work folder. By using the slider, you can quickly browse through the images in a work folder.
	Image navigation tool, #3 You use this tool to go to the next image in the work folder. By using the slider, you can quickly browse through the images in a work folder.
	Image navigation tool, #4 You use this tool to go to the last image in the work folder. By using the slider, you can quickly browse through the images in a work folder.
	Voice comment tool. You use this tool to listen to voice comments associated with an image.
	Export to Microsoft® Excel tool You use this tool to export pixel temperature values to Microsoft® Excel. You can then perform a variety of calculations on the pixel values.
	Fusion tool. You use this tool to change fusion mode for images taken with cameras that support fusion images. You can choose between three different fusion modes: ▪ **Interval**, which will display a certain temperature interval infrared while the rest of the image is a digital photo. ▪ **Blending**, which will mix the infrared image with the digital photo. ▪ **Picture-in-Picture**, which will display a portion of the digital photo as an infrared fram in the middle of the photo.

9 Connecting the camera

General

If your camera does not have a CompactFlash card or SD Memory Card, you must connect the camera to a computer to move the images to the computer.

NOTE

This note applies to using FLIR QuickReport with the following camera models on all operating systems:

- BCAM™/BCAM SD™
- InfraCAM™/InfraCAM SD™
- FLIR b40/b50/b60 and FLIR i40/i50/i60
- FLIR B200/B250/B360/B400
- FLIR T200/T250/T360/T400
- FLIR 620/640/660 series

Before you connect your camera to a computer to transfer images, start FLIR QuickReport manually and, in the camera, set the USB communication mode to the following:

- Standard (for models 1–3 above)
- Mass Storage Device (for models 4–6 above)

Procedure

Follow this procedure to connect the camera to a computer:

1	Connect a USB cable to the USB connector on the connector panel of the camera.
2	Connect the other end of the USB cable to its connector on the rear connector panel of a desktop or laptop computer.
3	When you have connected the camera the computer, go to section 10.1 – Moving images on page 18 for further instructions.

10 Handling files

10.1 Moving images

10.1.1 Moving images from your camera to your computer

General

Depending on camera model, you can use three different methods to move images from your camera to your computer:

- **Method 1:** Move the images using a USB cable.
- **Method 2:** Move the images using a CompactFlash card.
- **Method 3:** Move the images using an SD Memory Card.

Method 1

Follow this procedure to move images from your camera to your computer using a USB cable:

1	To start FLIR QuickReport and display the **Transfer images** dialog box, connect your camera to the computer (see section 9 – Connecting the camera on page 17). If the **Transfer images** dialog box does not appear automatically, start FLIR QuickReport and click **Transfer images** on the **Organize** tab. This will display the dialog box.
2	In the **Transfer images** dialog box, click one of these buttons: ▪ **Copy all images from the camera** ▪ **Move all images from the camera**
3	To select a different destination folder, click **Browse**.
4	To move the images, click **OK**.

NOTE

Depending on the camera model, the images may be saved in a subfolder instead of the specified folder itself, e.g., in C:\2007-01-23\images\dirA\ instead of C:\2007-01-23\.

Method 2

Follow this procedure to move images from your camera to your computer using a CompactFlash card:

1	Remove the CompactFlash card from your camera and insert it into a CompactFlash card reader that is connected to your computer.
2	In the folder pane of FLIR QuickReport, go to the disk drive for the CompactFlash card reader.
3	Do one of the following: ■ On the **Edit** menu, click **Move To Folder** to move the image/images to a destination folder of your choice. ■ Move the images to the destination folder using a drag-and-drop operation.

Method 3

Follow this procedure to move images from your camera to your computer using a SD Memory Card:

1	Remove the SD Memory Card from your camera and insert it into a SD Memory Card reader that is connected to your computer.
2	In the folder pane of FLIR QuickReport, go to the disk drive for the SD Memory Card reader.
3	Do one of the following: ■ On the **Edit** menu, click **Move To Folder** to move the image/images to a destination folder of your choice. ■ Move the images to the destination folder using a drag-and-drop operation.

10.1.2 Moving images on your computer

General

You can move one image or a group of images from the image pane to a destination folder, or to a different program on your computer.

Procedure

Follow this procedure to move one image or a group of images:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.
3	Do one of the following: ■ On the **Edit** menu, click **Move To Folder** to move the image/images to a destination folder of your choice. ■ Move the image/images to the destination folder using a drag-and-drop operation.

10.2 Copying images

General

You can copy one image or a group of images from the image pane to a destination folder, or to a different program on your computer.

Procedure

Follow this procedure to copy one image or a group of images:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.
3	Do one of the following: ■ On the **Edit** menu, click **Copy To Folder** to copy the image/images to a destination folder of your choice. ■ Right-click the image/images and click **Copy**. ■ Press CTRL + C.
4	Do one of the following: ■ Select a destination folder or a different program and press CTRL + V. ■ Select a destination folder or a different program and click **Paste** on the **Edit** menu.

10.3 Saving images to a different destination folder

General

You can save an image to a different destination folder on your PC.

Procedure

Follow this procedure to save an image to a different destination folder:

1	Do one of the following: ▪ Go to the **Organize** tab and select the image you want to save to a different destination folder. ▪ Go to the **Analyze** tab and use the image navigation slider to select the image you want to save to a different destination folder.
2	When you are on the **Analyze** tab, click **Save As** on the **File** menu and select a destination folder of your choice.
3	Save the image to this destination folder.

NOTE

When you go back to the program after you have saved the image, it is the old image that is displayed—not the image you just saved.

To find the image you just saved, go to the **Organize** tab and navigate to the folder using the folder pane.

10.4 Cutting & pasting images

General

You can cut & paste one image or a group of images to a destination folder, or to a different program.

Procedure

Follow this procedure to cut & paste one image or a group of images:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.
3	Do one of the following: ■ Right-click the image/images and click **Cut**. ■ Press CTRL + X.
4	In the destination folder, or the target application, do one of the following: ■ Right-click and click **Paste**. ■ Press CTRL + V.

10.5 Deleting images

General

You can delete one image or a group of images.

Procedure

Follow this procedure to delete one image or a group of images:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.
3	Do one of the following: ■ Press DELETE. ■ On the **File** menu, click **Delete**.

NOTE

When you delete an image or a group of images, you can still restore them from the computer's Recycle Bin.

10.6 Renaming images

General

You can rename an image.

Procedure

Follow this procedure to rename an image:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	To select an image, click the image one time.
3	Right-click the image and click **Rename**.
4	Type the new name for the image and press ENTER.

10.7 Printing images

General

You can print one image or a group of images on a local or network printer.

Procedure

Follow this procedure to print one image or a group of images:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Analyze** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.

3	Do one of the following:
	■ If you are on the **Organize** tab, do one of the following:
	  ■ Right-click the image/images and click **Print**.
	  ■ Click **Print selected images**.
	  ■ On the **File** menu, select **Print**.
	■ If you are on the **Analyze** tab, select **Print** on the **File** menu.
	■ If you are on the **Report** tab, do one of the following:
	  ■ Right-click the image/images and click **Print**.
	  ■ On the **File** menu, select **Print**.

4	In the **Print** dialog box, make the necessary changes and click **OK**.

10.8 Sending images by e-mail (Microsoft® Outlook only)

General

You can send one image or a group of images by e-mail.

Procedure

Follow this procedure to send one image or a group of images by e-mail:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Do one of the following: ■ To select one image, click the image once. ■ To select images that are adjacent to each other, SHIFT-click the images. ■ To select images that are not adjacent to each other, CTRL-click the images.
3	Do one of the following: ■ Right-click the image/images and click **Send To** → **Mail Recipient**. ■ On the **File** menu, click **Send To Mail Recipient**.

11 Viewing images

11.1 Changing view settings

General

On the **Organize** tab and the **Report** tab you can change the size of image thumbnails.

Procedure

Follow this procedure to change the size of image thumbnails:

1	Go to one of the following tabs: ■ The **Organize** tab ■ The **Report** tab
2	Move the **Thumbnail size** slider to the left (smaller thumbnails) or to the right (larger thumbnails).

11.2 Changing zoom factor

General

You can change zoom factor for an image.

Procedure

Follow this procedure to change zoom factor for an image:

1	Do one of the following: ▪ Go to the **Organize** tab and select the image for which you want to change zoom factor. ▪ Go to the **Analyze** tab and use the image navigation slider to select the image for which you want to change zoom factor.
2	On the image toolbar on the **Analyze** tab, click the zoom factor on the **Zoom** menu.

NOTE

To reset the zoom factor to 1×, press the space bar on your keyboard.

11.3 Rotating images

General

You can rotate an image counter-clockwise or clockwise in 90° increments.

Procedure

Follow this procedure to rotate an image:

1	Do one of the following: ■ Go to the **Organize** tab and select the image you want to rotate. ■ Go to the **Analyze** tab and use the image navigation slider to select the image you want to rotate.
2	On the **Analyze** tab, do one of the following: ■ To rotate the image counter-clockwise, click the toolbar button. ■ To rotate the image clock-wise, click the toolbar button.

11.4 Changing palette

General

You can change the palette that the camera uses to display the different temperatures within the image. A different palette can make it easier to make an analysis of the image.

Procedure

Follow this procedure to change the palette:

1	Do one of the following: ▪ Go to the **Organize** tab and select the image for which you want to change the palette. ▪ Go to the **Analyze** tab and use the image navigation slider to select the image for which you want to change the palette.
2	On the **Analyze** tab, click the toolbar button to select a new palette.

NOTE

- In some camera models, **Palette** is called **Color**.
- Radiometric *.jpg images that are merged from an infrared image and a digital photo will be correctly displayed in FLIR QuickReport.

12 Analyzing images

General

Do one or more of the following steps to analyze your images:

- Use the flying spot meter tool.
- Create a spot meter.
- Create a line.
- Create a measurement area.
- Create an isotherm.
- Move a spot or an area.
- Delete a spot or an area.
- Delete an isotherm.
- Change isotherm levels.
- Change temperature levels.
- Change object parameters.
- Auto-adjust the image.

SEE ALSO

For more information, see these sections:

- Section 12.1 – Using the flying spot meter tool on page 33
- Section 12.2 – Creating a spot meter on page 34
- Section 12.3 – Creating a line on page 35
- Section 12.4 – Creating an area on page 36
- Section 12.5 – Isotherms & building alarms on page 37
- Section 12.7 – Moving a spot meter, area, or a line on page 40
- Section 12.8 – Deleting a spot meter, area, or a line on page 41
- Section 12.9 – Deleting an isotherm or a building alarm on page 42
- Section 12.6 – Changing isotherm levels on page 39
- Section 12.10 – Changing temperature levels on page 43
- Section 12.11 – Changing object parameters on page 44
- Section 12.12 – Auto-adjusting an image on page 45

12.1 Using the flying spot meter tool

Procedure

Follow this procedure to use the flying spot meter tool to see the temperature:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	To display the temperature, move the flying spot meter tool to any position on the image. The temperature will be displayed at the position of the flying spot meter tool.

12.2 Creating a spot meter

Procedure

Follow this procedure to create a spot meter:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	To create a spot meter, click in the image at the position where you want the spot meter to appear. The temperature will be displayed in the result table.

12.3 Creating a line

Procedure

Follow this procedure to create a line:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	To create a line, click-and-drag within the image. The temperature along the line will be displayed in the result table.

12.4 Creating an area

Procedure

Follow this procedure to an create an area:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	To create an area, click-and-drag within the image. The minimum and maximum temperature will be displayed in the result table.

12.5 Isotherms & building alarms

12.5.1 Creating an isotherm

General

You use the isotherm tool to assign a color to specific temperature ranges, and to work with alarms.

Procedure

Follow this procedure to create an isotherm:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, select one of the following isotherm types on the **Isotherm and alarm tools** menu: ▪ **Above** ▪ **Below** ▪ **Interval**

NOTE

In some camera models, **Isotherm** is called **Color alarm**.

12.5.2 About building alarms

General

If your camera supports **Dewpoint alarm** and **Insulation alarm**, you can work with these alarms in FLIR QuickReport.

About the Dewpoint alarm

Dewpoint can be regarded as the temperature at which the humidity in a certain volume of air will condense as liquid water. At this point, the relative humidity is 100%.

When you have set a number of environmental parameters, the **Dewpoint** alarm can detect these areas and warn you that there may be a deficiency in the building structure.

About the Insulation alarm

The **Insulation** alarm can detect areas where there may be an insulation deficiency in the building. It will trigger when the insulation level falls below a preset value of the energy leakage through the wall.

Different building codes recommend different values, but typical values are 0.6–0.8 for new buildings. Refer to your national building code for recommendations.

About the Alarm Settings dialog box

On the **Insulation alarm** tab you can change one or more of the following alarm parameters:

- **Outdoor temperature**
- **Indoor temperature**
- **Insulation level**

On the **Dewpoint alarm** tab you can change one or more of the following alarm parameters:

- **Relative humidity**
- **Atmospheric temperature**

SEE

For more information about these alarm types and alarm parameters, see your camera manual.

12.6 Changing isotherm levels

Procedure

Follow this procedure to change isotherm levels:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, select one of the following isotherm types on the **Isotherm and alarm tools** menu: ▪ **Above** ▪ **Below** ▪ **Interval**
3	On the image toolbar on the **Analyze** tab, click the toolbar button.
4	To change isotherm levels, click-and-drag the bar in the temperature scale.

NOTE

In some camera models, **Isotherm** is called **Color alarm**.

12.7 Moving a spot meter, area, or a line

Procedure

Follow this procedure to move a spot meter, area, or a line:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	Click the spot meter or the area once and hold down the mouse key.
4	To move the spot meter or the area, move the mouse and then release the mouse button.

12.8 Deleting a spot meter, area, or a line

Procedure

Follow this procedure to delete a spot meter, area, or a line:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.
3	Click the spot meter, the area or line once.
4	Do one of the following to delete the spot meter, the area or line: ▪ Press DELETE ▪ On the image toolbar, click the toolbar button.

12.9 Deleting an isotherm or a building alarm

Procedure

Follow this procedure to delete an isotherm or a building alarm:

1	On the **Organize** tab, double-click an image that has an isotherm.
2	On the image toolbar on the **Analyze** tab, click the selected isotherm type or building alarm on the **Isotherm and alarm tools** menu. This will delete the isotherm or building alarm.

12.10 Changing temperature levels

General

At the bottom of the infrared image you will see two sliders. By dragging these sliders to the left or to the right you can change the top and bottom levels in the temperature scale.

Changing the top level

Follow this procedure to change the top level in the temperature scale:

1	On the **Organize** tab, double-click an image.
2	In the image on the **Analyze** tab, drag the right slider right or left to change the top level in the temperature scale

Changing the bottom level

Follow this procedure to change the bottom level in the temperature scale:

1	On the **Organize** tab, double-click an image.
2	In the image on the **Analyze** tab, drag the left slider right or left to change the bottom level in the temperature scale.

Changing both the top & bottom levels at the same time

Follow this procedure to change both the top and the bottom levels in the temperature scale at the same time:

1	On the **Organize** tab, double-click an image.
2	In the image on the **Analyze** tab, SHIFT-drag the left or right slider right or left to change both the top and the bottom levels in the temperature scale at the same time.

12.11 Changing object parameters

General

You can change the object parameter values for an image. Object parameters have an effect on the infrared radiation that the camera measures.

Recommended values

If you are unsure about the values, the following values are recommended:

Atmospheric temperature	+20°C (+69°F)
Distance	1.0 m (3.3 ft.)
Emissivity	0.95
Reflected apparent temperature	+20°C (+69°F)
Relative humidity	50%

Procedure

Follow this procedure to change object parameters:

1	On the **Organize** tab, double-click an image.
2	On the **Analyze** tab, go to the **Object parameters** tab in the right pane.
3	Type a value in the text box for each object parameter that you want to change. For emissvity you can also choose a value from a list of defined materials.
4	Click **Apply**.

12.12 Auto-adjusting an image

General

You can auto-adjust an image or a group of images. When you auto-adjust an image you adjust it for best image brightness and contrast.

Procedure

Follow this procedure to auto-adjust an image:

1	On the **Organize** tab, double-click an image.
2	On the image toolbar on the **Analyze** tab, click the toolbar button.

13 Adding & editing image descriptions

General

You can add image descriptions to radiometric and non-radiometric *.jpg images. The image description will be saved in the image file and can be retrieved by other programs from FLIR Systems, and by programs from other companies.

NOTE

- An image description cannot be more than 255 characters.
- Press ENTER to start a new line.
- An image from an infrared camera may already contain an image description.

Adding an image description

Follow this procedure to add an image description:

1	On the **Organize** tab, double-click an image.
2	On the **Analyze** tab, enter an image description in the **Image description** text box.
3	To save the image description, click the toolbar button on the toolbar.

Editing an image description

Follow this procedure to edit an image description:

1	On the **Organize** tab, double-click an image that has an image description.
2	On the **Analyze** tab, edit the image description in the **Image description** text box.
3	To save the change, click the toolbar button on the toolbar.

14 Working with text comments and text comment files

14.1 Adding, editing, and deleting text comments

General

In some camera models from FLIR Systems you can annotate infrared images using text comments. A text comment is stored in an image file and you can add, edit or delete text comments in FLIR QuickReport.

Editing a text comment

Follow this procedure to add, edit, or delete a text comment:

1	On the **Organize** tab, double-click an image. If you want to edit or delete a text comment, you must choose an image that already has a text comment.
2	Do one of the following: ▪ To add a text comment, click the toolbar button and add the text comment in the **Text comments** dialog box. ▪ To edit a text comment, select a text comment in the list, then click the toolbar button and edit the text comment in the **Text comments** dialog box. ▪ To delele a text comment, select a text comment in the list, then click the toolbar button and delete the text comment.
3	To save the change, click the toolbar button on the toolbar.

14.2 Creating text comment files (*.tcf)

General

In FLIR QuickReport you can create text comment files (*.tcf files) and use these text comment files in cameras that support text comments.

Example markup structure

This code sample is an example markup structure of a *.tcf file. It shows how the markup looks in Notepad. The words between pointed brackets are labels, and the words without pointed brackets are values.

```
<Company>
Company A
Company B
Company C
<Building>
Workshop 1
Workshop 2
Workshop 3
<Section>
Room 1
Room 2
Room 3
<Equipment>
Tool 1
Tool 2
Tool 3
<Recommendation>
Recommendation 1
Recommendation 2
Recommendation 3
```

Editing a text comment

Follow this procedure to create a text comment file:

1	On the **Analyze** tab, go to the **Text comments** tab.
2	Click the toolbar button. This will display the text comment editor.
3	On the **File** menu, click **New** → **Text Comment**.
4	To create a new *text comment label*, click the left-most button at the top of *the left pane*. You can delete labels and move them up or down by using the other buttons at the top of the pane.
5	To create a new *text comment value*, click the label for which you want to create values, and then click the left-most button at the top of *the right pane*. You use the buttons at the top in the same way as when creating the labels.
6	When you have finished, move the text comment file to the Images folder on your camera, using the memory card or the USB cable.

15 Creating a report

General

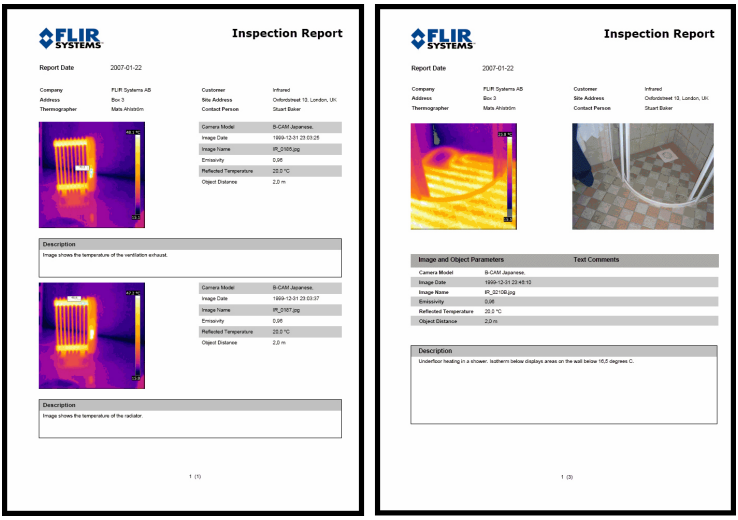
You can create inspection reports that include one or more infrared images and digital photos. The reports are saved in Adobe® PDF format. To download the free reader, go to:

http://www.adobe.com/products/reader/

Figure

This figure shows two inspection reports, generated from the **IR and IR** template (left), and the **IR and Photo** template (right):

10758203;a2



Procedure

Follow this procedure to create a report:

1	Go to the **Report** tab.
2	In the **Report template** box on the image toolbar, select the report template you want to use.
3	Move the images you want to include in your report to the report pane, using a drag-and-drop operation. A preview of the report pages will be displayed in the report preview pane.
4	To rearrange the pages and enter report information, click the corresponding toolbar buttons.

5	On the toolbar, click **Create report**. The report will now be created. You can see a print preview of the report in a separate window. To save the report as an Adobe® PDF file, click the toolbar button in the separate window.

NOTE

Do not create reports with more than 150 pages, as this slows down the performance of the program.

16 Troubleshooting

Troubleshooting overview

To troubleshoot communication between the camera and the PC, do one or more of the following:

- Make sure the PC has the latest drivers. If not, download them from *http://www.flirthermography.com*.
- Restart the camera to check if the problem reoccurs.
- Troubleshoot connection problems.
- Give a user Local Administrator Rights.
- Give a user rights to install and uninstall device drivers.
- Troubleshoot password-protected screensaver problems.

SEE ALSO

For more information, see these sections:

- Section 16.1 – Restarting the camera on page 52
- Section 16.2 – Giving a user Local Administrator Rights on page 53
- Section 16.3 – Giving a user rights to install and uninstall device drivers on page 54
- Section 16.4 – Troubleshooting password-protected screensaver problems on page 55

16.1 Restarting the camera

Procedure

Follow this procedure to restart the camera:

1	Disconnect the camera from the PC.
2	Restart the camera.
3	Restart the PC.
4	Connect the camera to the PC.

16.2 Giving a user Local Administrator Rights

Problem

On Windows® XP only Administrators and users with appropriate rights can install and uninstall device drivers.

This section gives information about how to give a user Local Administrator Rights.

NOTE

You must log in as Administrator (or as a user with Administrator Rights).

Procedure

Follow this procedure to give a user Local Administrator Rights:

1	Open the **Control Panel** (**Start Menu** → **Settings** → **Control Panel**).
2	Double-click **Administrative Tools**.
3	Double-click **Computer Management**.
4	Double-click **Local Users And Groups**.
5	Select **Groups** and double-click **Administrators**.
6	Add the relevant users, or the name of a group containing the right users.

16.3 Giving a user rights to install and uninstall device drivers

Problem

On Windows® XP only Administrators and users with appropriate rights can install and uninstall device drivers.

This section gives information about how to give a user rights to install and uninstall device drivers.

NOTE

You must log in as Administrator (or as a user with Administrator Rights).

Procedure

Follow this procedure to give a user rights to install and uninstall device drivers:

1	Open the **Control Panel** (**Start Menu** → **Settings** → **Control Panel**).
2	Double-click **Administrative Tools**.
3	Double-click **Local Security Policy**.
4	Double-click **Local Policies**.
5	Select **User Rights Assignment**.
6	Double-click **Load and Unload Device Drivers**.
7	Add the relevant users, or the name of a group containing the right users.

16.4 Troubleshooting password-protected screensaver problems

Problem	If you change user for a computer, or use a password-protected screensaver, the camera icon in the status area may disappear.
Procedure	Disconnect and reconnect the USB cable between your camera and your computer.

17 About FLIR Systems

FLIR Systems was established in 1978 to pioneer the development of high-performance infrared imaging systems, and is the world leader in the design, manufacture, and marketing of thermal imaging systems for a wide variety of commercial, industrial, and government applications. Today, FLIR Systems embraces four major companies with outstanding achievements in infrared technology since 1965—the Swedish AGEMA Infrared Systems (formerly AGA Infrared Systems), and the three United States companies Indigo Systems, FSI, and Inframetrics.

10722703;a2

Figure 17.1 LEFT: Thermovision® Model 661 from 1969. The camera weighed approximately 25 kg (55 lb.), the oscilloscope 20 kg (44 lb.), and the tripod 15 kg (33 lb.). The operator also needed a 220 VAC generator set, and a 10 L (2.6 US gallon) jar with liquid nitrogen. To the left of the oscilloscope the Polaroid attachment (6 kg/13 lb.) can be seen. **RIGHT:** FLIR i5 from 2008. Weight: 0.34 kg (0.75 lb.), including the battery.

The company has sold more than 40,000 infrared cameras worldwide for applications such as predictive maintenance, R & D, non-destructive testing, process control and automation, and machine vision, among many others.

FLIR Systems has three manufacturing plants in the United States (Portland, OR, Boston, MA, Santa Barbara, CA) and one in Sweden (Stockholm). Direct sales offices in Belgium, Brazil, China, France, Germany, Great Britain, Hong Kong, Italy, Japan, Sweden, and the USA—together with a worldwide network of agents and distributors—support our international customer base.

FLIR Systems is at the forefront of innovation in the infrared camera industry. We anticipate market demand by constantly improving our existing cameras and developing new ones. The company has set milestones in product design and development such as the introduction of the first battery-operated portable camera for industrial inspections, and the first uncooled infrared camera, to mention just two innovations.

FLIR Systems manufactures all vital mechanical and electronic components of the camera systems itself. From detector design and manufacturing, to lenses and system electronics, to final testing and calibration, all production steps are carried out and supervised by our own engineers. The in-depth expertise of these infrared specialists ensures the accuracy and reliability of all vital components that are assembled into your infrared camera.

17.1 More than just an infrared camera

At FLIR Systems we recognize that our job is to go beyond just producing the best infrared camera systems. We are committed to enabling all users of our infrared camera systems to work more productively by providing them with the most powerful camera–software combination. Especially tailored software for predictive maintenance, R & D, and process monitoring is developed in-house. Most software is available in a wide variety of languages.

We support all our infrared cameras with a wide variety of accessories to adapt your equipment to the most demanding infrared applications.

17.2 Sharing our knowledge

Although our cameras are designed to be very user-friendly, there is a lot more to thermography than just knowing how to handle a camera. Therefore, FLIR Systems has founded the Infrared Training Center (ITC), a separate business unit, that provides certified training courses. Attending one of the ITC courses will give you a truly hands-on learning experience.

The staff of the ITC are also there to provide you with any application support you may need in putting infrared theory into practice.

17.3 Supporting our customers

FLIR Systems operates a worldwide service network to keep your camera running at all times. If you discover a problem with your camera, local service centers have all the equipment and expertise to solve it within the shortest possible time. Therefore, there is no need to send your camera to the other side of the world or to talk to someone who does not speak your language.

17.4 A few images from our facilities

10401303;a1

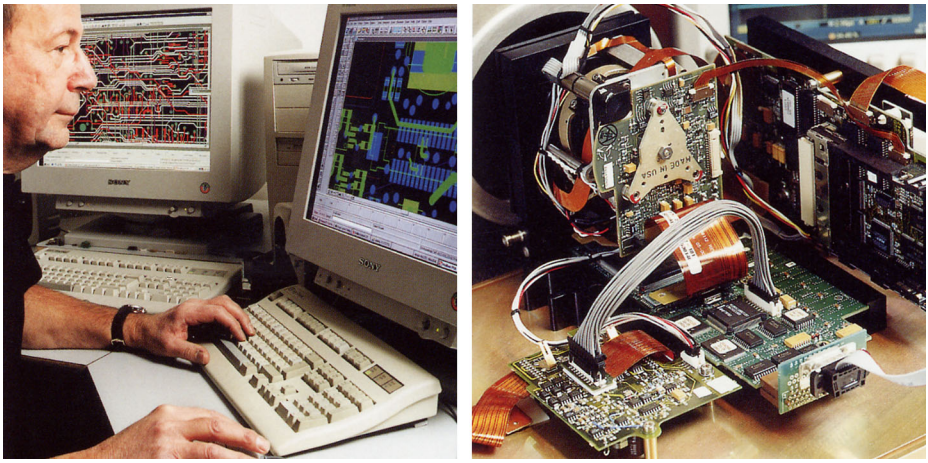


Figure 17.2 LEFT: Development of system electronics; **RIGHT:** Testing of an FPA detector

10401403;a1

Figure 17.3 LEFT: Diamond turning machine; **RIGHT:** Lens polishing

10401503;a1

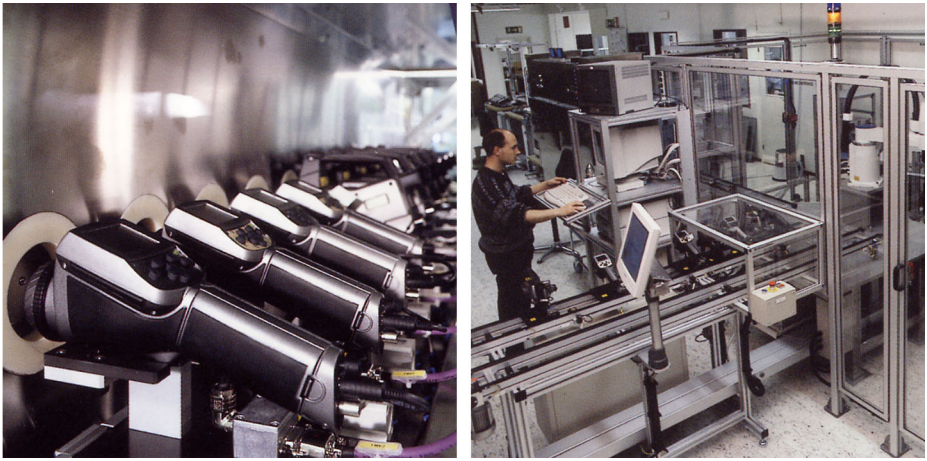


Figure 17.4 LEFT: Testing of infrared cameras in the climatic chamber; **RIGHT:** Robot used for camera testing and calibration

A note on the technical production of this publication

This publication was produced using XML—the e*Xtensible Markup Language*. For more information about XML, please visit http://www.w3.org/XML/

A note on the typeface used in this publication

This publication was typeset using Swiss 721, which is Bitstream's pan-European version of the Helvetica™ typeface. Helvetica™ was designed by Max Miedinger (1910–1980).

List of effective files

20236703.xml a41
20250403.xml a18
20254903.xml a57
20257003.xml a35
20274003.xml a6
20274103.xml a7
20274203.xml a6
20274303.xml a9
20274403.xml a5
20274503.xml a5
20274603.xml a5
20274703.xml a6
20274803.xml a7
20274903.xml a5
20275003.xml a5
20275103.xml a7
20279003.xml a10
20283503.xml a2
20283603.xml a4
20287303.xml a8
20292403.xml a4
R0045.rcp a22
config.xml a5

▪ AUSTRALIA
FLIR Systems
10 Business Park Drive
Nottinghill
Victoria 3168
Australia
Tel: +61-3-9550-2800
Fax: +61-3-9558-9853
Email: info@flir.com.au
Web: www.flir.com

▪ BELGIUM
FLIR Systems
Uitbreidingstraat 60–62
B-2600 Berchem
BELGIUM
Phone: +32 (0)3 287 87 11
Fax: +32 (0)3 287 87 29
E-mail: info@flir.be
Web: www.flir.com

▪ BRAZIL
FLIR Systems
Av. Antonio Bardella, 320
CEP: 18085-852 Sorocaba
São Paulo
BRAZIL
Phone: +55 15 3238 8070
Fax: +55 15 3238 8071
E-mail: flir@flir.com.br
Web: www.flir.com

▪ CANADA
FLIR Systems
5230 South Service Road, Suite #125
Burlington, ON. L7L 5K2
CANADA
Phone: 1 800 613 0507 ext. 30
Fax: 905 639 5488
E-mail: IRCanada@flir.com
Web: www.flir.com

▪ CHINA
FLIR Systems
Beijing Representative Office
Room 509, Building C, Vantone Center
No. A-6 Chaoyangmenwai Ave.
Chaoyang District
Beijing 100020
P.R.C.
Phone: +86 10 5979 7755
Fax: +86 10 8532 2460
E-mail: beijing@flir.com.cn
Web: www.flir.com

▪ CHINA
FLIR Systems
Shanghai Representative Office
Room 6311, West Building
Jin Jiang Hotel
59 Maoming Road (South)
Shanghai 200020
P.R.C.
Phone: +86 21 5466 0286
Fax: +86 21 5466 0289
E-mail: shanghai@flir.com.cn
Web: www.flir.com

▪ CHINA
FLIR Systems
Guangzhou Representative Office
1105 Main Tower, Guang Dong
International Hotel
339 Huanshi Dong Road
Guangzhou 510098
P.R.C.
Phone: +86 20 8333 7492
Fax: +86 20 8331 0976
E-mail: guangzhou@flir.com.cn
Web: www.flir.com

▪ FRANCE
FLIR Systems
10 rue Guynemer
92130 Issy les Moulineaux
Cedex
FRANCE
Phone: +33 (0)1 41 33 97 97
Fax: +33 (0)1 47 36 18 32
E-mail: info@flir.fr
Web: www.flir.com

▪ GERMANY
FLIR Systems
Berner Strasse 81
D-60437 Frankfurt am Main
GERMANY
Phone: +49 (0)69 95 00 900
Fax: +49 (0)69 95 00 9040
E-mail: info@flir.de
Web: www.flir.com

▪ GREAT BRITAIN
FLIR Systems
2 Kings Hill Avenue – Kings Hill
West Malling
Kent, ME19 4AQ
UNITED KINGDOM
Phone: +44 (0)1732 220 011
Fax: +44 (0)1732 843 707
E-mail: sales@flir.uk.com
Web: www.flir.com

▪ HONG KONG
FLIR Systems
Room 1613–15, Tower 2
Grand Central Plaza
138 Shatin Rural Committee Rd
Shatin, N.T.
HONG KONG
Phone: +852 27 92 89 55
Fax: +852 27 92 89 52
E-mail: flir@flir.com.hk
Web: www.flir.com

▪ ITALY
FLIR Systems
Via L. Manara, 2
20051 Limbiate (MI)
ITALY
Phone: +39 02 99 45 10 01
Fax: +39 02 99 69 24 08
E-mail: info@flir.it
Web: www.flir.com

▪ JAPAN
FLIR SYSTEMS Japan KK
Nishi-Gotanda Access 8F
3-6-20 Nishi-Gotanda
Shinagawa-Ku
Tokyo 141-0031
JAPAN
Phone: +81 3 6277 5681
Fax: +81 3 6277 5682
E-mail info@flir.jp
Web: www.flir.com.

▪ SWEDEN
FLIR Systems
Worldwide Thermography Center
P.O. Box 3
SE-182 11 Danderyd
SWEDEN
Phone: +46 (0)8 753 25 00
Fax: +46 (0)8 753 23 64
E-mail: sales@flir.se
Web: www.flir.com

▪ USA
FLIR Systems
Corporate headquarters
27700A SW Parkway Avenue
Wilsonville, OR 97070
USA
Phone: +1 503 498 3547
Web: www.flir.com

▪ USA (Primary sales & service contact in USA)
FLIR Systems
USA Thermography Center
25 Esquire Road
North Billerica, MA. 01862
USA
Phone: +1 978 901 8000
Fax: +1 978 901 8887
E-mail: marketing@flir.com
Web: www.flir.com

▪ USA
FLIR Systems
Indigo Operations
70 Castilian Dr.
Goleta, CA 93117-3027
USA
Phone: +1 805 964 9797
Fax: +1 805 685 2711
E-mail: cbi@flir.com
Web: www.corebyindigo.com

▪ USA
FLIR Systems
Indigo Operations
IAS Facility
701 John Sims Parkway East
Suite 2B
Niceville, FL 32578
USA
Phone: +1 850 678 4503
Fax: +1 850 678 4992
E-mail: cbi@flir.com
Web: www.corebyindigo.com